



NAVAL POSTGRADUATE SCHOOL

MONTEREY, CALIFORNIA

THESIS

**THE PRINCIPLES OF PREVENTION AND THE DEVELOPMENT OF THE
PREVENTION TRIANGLE MODEL FOR THE EVALUATION OF
TERRORISM PREVENTION**

by

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March 2005

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PREVENTION TRIANGLE MODEL FOR THE EVALUATION OF
TERRORISM PREVENTION**

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ABSTRACT

In “The Principles of Prevention and the Development of the Prevention Triangle Model for the Evaluation of Terrorism Prevention,” we propose the theoretical and practical development of the “Prevention Triangle,” a graphical model designed to define a system for evaluating national, state, and local terrorism prevention mandates and programs. Based upon objectives detailed in the *National Strategy for Homeland Security*, and derived through an analysis of selected prevention theories and programs – primarily those aimed at crime prevention – this study first seeks a theoretical basis for the prevention of terrorism in the form of four principles before deriving and defining representative evaluative criteria for designing and measuring the efficacy of prevention programs.

As conceived, the Prevention Triangle has through dispositional and experiential theory, further application to the ritualizing of many of the strategic and operational components associated with the present alliance against global terrorism. This reflects our understanding that while the theoretical premises and evaluative proxies of contemporary terrorism prevention theory largely rely on situational prevention strategies and tactics, the true measure of any prevention mandate is more akin to dispositional and experiential prevention, in that it occurs over time, and through societal change and communal observation, and is therefore more accurately evaluated through the development of long-term baseline data.

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This work is dedicated to my beloved parents, Léonie Nielsen and Wilber Estace Longshore, and to the City of New York.

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I. INTRODUCTION

This thesis is about the prevention of terrorist attacks against the American homeland. It is about the reasons why we need to practice, as a nation, the prevention of these terrorist attacks. It is about the difficulties and inconsistencies inherent in conceptualizing terrorism prevention, and the necessity for us to conceptualize new types of prevention concepts if the national terrorism prevention mandate is to fully succeed. And it is as much about the search for a universal language of terrorism prevention as it is an attempt to develop a model for harnessing this common definition for the purposes of implementation and evaluation.

As will be indicated, this thesis does not concern itself so much with the prevention of terrorism, as it does the with prevention of terrorist attacks. It can be argued that they are, in essence, one and the same, and that to address one is to resolve the other. But by this very same logic, we can hypothesize that the enormous number of variables inherent in terrorism as a strategy, coupled with the vast resources and capabilities required to prevent or mitigate the many motivations that lie behind terrorism, make it a largely unachievable objective.

Instead, and as will be evidenced in this thesis, it is an easier and more comprehensible strategy to instead attempt the prevention of terrorist attacks, rather than simply the root causes of terrorism. Certainly, a dual-pronged approach to resolving the terrorism phenomena is desirable, but not if it comes at the cost of American security, prosperity, or liberty.

This thesis is also about the building of a model, a theoretical model that those organizations responsible for implementing terrorist prevention strategies and tactics can refer to in designing their programs. In this thesis, we propose the theoretical and practical development of the “Prevention Triangle,” a graphical model designed to define a system for evaluating national, state, and local terrorism prevention mandates and programs. Based upon objectives detailed in the *National Strategy for Homeland Security*, and through an analysis of selected prevention theories and programs –

primarily those aimed at crime prevention – this study first seeks a theoretical basis for the prevention of terrorism before deriving and defining evaluative criteria for designing and measuring the efficacy of prevention programs.

As conceived, the Prevention Triangle has, through dispositional theory, further application to the ritualizing of many of the strategic and operational components associated with the present alliance against global terrorism. This reflects our understanding that while the theoretical premises and evaluative proxies of contemporary terrorism prevention theory largely rely on situational prevention strategies and tactics, the true measure of any prevention mandate is more akin to dispositional and experiential prevention, in that it occurs over time, and through societal change and communal observation, and is therefore more accurately evaluated through the development of long-term baseline data.

Crime prevention theorists Tonry and Farrington caution us that without baseline data, it is very difficult, if not nearly impossible, to accurately observe and quantify prevention strategies. “...most shops have no valid measure of shoplifting that can be used before or after prevention strategies are implemented.”¹ If we consider prevention measures implemented to prevent or reduce the situations under which shoplifting occurs, it is not difficult to draw a similar connection between the concept of situational prevention in general, and the need to derive a baseline to measure situational prevention, in particular.

Those students and practitioners of Homeland Security who are interested in implementing terrorism prevention programs, and then evaluating their effectiveness, should remember a 1991 article titled, “The Public Administrator as Hero,” by Christopher Bellavita. Here, Bellavita draws upon the metaphor of a “dragon that roams the countryside destroying everything in its path...Into this slough of despondency comes the hero, the man or woman who takes on the task of bringing new life to a dying land.”² Through a penetrating analysis of empirical and situational data, Bellavita links the improvement of government efficiency and morale to an understanding of public officials and administrators as heroes, or people whose “stories” were “structurally similar to what

Joseph Campbell (1968) called ‘the hero’s journey’...” “What emerged instead,” Bellavita concluded, “were stories about people overcoming forces to bring new vitality to stagnant systems.”³

The development of the Prevention Triangle, with its multi-capacity approach to evaluating prevention through the general proxies of *Objectives*, *Capabilities*, and *Hostilities*, is one possible tool that the public administrator can use in his or her hero’s journey through the landscape of terrorism prevention measures and programs.

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II. THE PROBLEM

Prevention has been selected as one of the principal strategies by which the United States and its partners in the global alliance against terrorism have chosen to address the general issue of international terrorism, and the more specific mission of preventing terrorist activity within the American homeland.

In 2002, the federal government promulgated the *National Strategy for Homeland Security*, which established three objectives that are derived from, and apply to, the prevention of terrorist acts: “1) Prevent terrorist attacks within the United States; 2) Reduce America’s vulnerability to terrorism, and; 3) Minimize the damage and recover from attacks that may occur.”⁴

For the purposes of this thesis, we are essentially interested in all three objectives, but with particular emphasis on the first, “prevent terrorist attacks within the United States.” It is our view that if this objective is successfully achieved, the other two mission areas will prove less important to the overall success of preventing terrorist activity within the nation’s borders, or against its significant overseas interests.

But there are innumerable challenges within this approach, and this thesis seeks to resolve some of these issues. For instance, what are the theoretical and dynamical definitions for the prevention of terrorism? If we analyze and determine this theoretical and dynamical basis, can we then derive a graphical or mathematical representation for defining prevention? And if we are successful in this undertaking, will it be subsequently possible to develop a system for actually evaluating prevention, measuring it much as we attempted to evaluate crime prevention programs in the past?

There are dozens of different studies and assessments of prevention already in existence. Past prevention models have addressed this sense of different types of prevention by following the public health model, which describes Primary, Secondary, and Tertiary prevention. But these models are limited by their emphasis on prevention as observed through action, without realizing that what it is really attempting to do is establish a hierarchy of importance as it relates to prevention.

As is the case with all government initiatives, there is also an important fiduciary aspect to the efficiency and effectiveness of any nationwide terrorism prevention strategy. In fiscal year 2004, the USDHS Office for Domestic Preparedness (ODP), the arm of the department tasked with overseeing the National Exercise Program, expended \$20 million on preparedness exercise planning, support, and implementation, all geared toward realizing an enhanced degree of terrorism prevention. Since 1998, ODP has provided more than \$7 billion in homeland security funding for equipment, training, exercises and planning – a considerable sum of money that implies diligence and commitment, but as of yet perhaps defies complete evaluation.⁵ As mirrored by Tonry and Farrington, “High-quality evaluation research designs are needed to convince leading scholars, as well as intelligent policy makers and practitioners, about the effectiveness of crime prevention techniques.”⁶ And the same rationale can be applied to the effectiveness of our terrorism prevention systems.

However, the ongoing debate on which type of prevention theory to employ has seemingly mired the implementation of a national terrorism prevention mandate in paralyzing uncertainty. This thesis, through an analysis of past crime prevention theory, added to an analysis of evaluation concepts, yields a model for prevention that we are calling “The Prevention Triangle.” And unlike most of the literature currently in existence, we actually provide a theoretical proof for the dynamics and outcomes of the Prevention Triangle model. Once we have evidenced that prevention can be modeled, and once we have illustrated how that model can be evaluated, we are then in a position to provide a conceptual proof for how the Prevention Triangle operates. These proofs are the evaluative criteria for the implementation of prevention baseline data.

III. THE METHODOLOGY

The methodology used in constructing this thesis is primarily comparison and contrast, and is geared principally toward an analysis of crime prevention and program evaluation theory. Because our end objective is to devise a graphical model that can be used to define and implement a terrorism prevention evaluation system on the national, state, and local levels, our methodology reflects the step-by-step process on which broad theoretical relationships are constructed, then applied to real world problems.

1. We analyze, through comparison and contrast, the effectiveness of past crime prevention theories and programs. From this we derive base principles of terrorism prevention.
2. We analyze, through comparison and contrast, how these programs were evaluated. This includes an analysis of proxies and evaluation criteria. From this we derive base principles for the evaluation of terrorism prevention.
3. Based upon these principles, we construct a logical proof and graphical model for the concept of terrorism prevention.
4. By applying evaluative theory to our prevention model, we derive an additional model, the Prevention Triangle. It is crucial to remember that without first providing proof for the model, we cannot apply the model to the prevention challenge.
5. Our methodology is itself triangular in logic, an implied hierarchy that we can then arrange into a triangular representation. As will be evidenced, the triangle is the most appropriate logical and graphical model for this purpose.

We also employ two primary analogies as part of our methodology. One involves a young child and its guardian within an average home setting, and the other the events of September 11, 2001. These analogies, which are not as divergent in context as one might believe, are important to our understanding of prevention and evaluation theory, not only as illustrations for sometimes challenging theoretical concepts, but also as theoretical proofs for many of these same concepts.

During this study, it has not been our intent to answer every possible nuance in the definitional standard of prevention, nor has it been our primary objective to design individual prevention programs for every jurisdiction in the nation. As Hatry states, “...governmental programs seldom can be adequately evaluated by attempts to compress multiple measures into a single criterion such as a single monetary measure.”⁷

Rather, our study objective has been to cull from a voluminous canon of literature and thought, policy and practice, the theoretical reasons why we should want to evaluate or measure our effectiveness in preventing terrorism and acts of terrorism; how we should identify this information; and what evaluative measures we should employ to uniformly assess the information.

Through the development and application of the Prevention Triangle model to the *National Strategies for Homeland Security* and for *Combating Terrorism*, we have derived viable answers to these and other questions. Along the way, it has at times become necessary to alter preexisting notions of prevention theory and implementation in order to devise an evaluative system that both diagnoses and evaluates progress or enhancement in those areas subject to observation. Heidinsfield tells us, “The limitations of the method [for evaluating crime prevention] are due to the restrictions imposed by its underlying assumptions.”⁸ This prevention-based enhancement allows for the systematic quantification of both strengths and deficiencies on all jurisdictional levels, and the eventual development of a large baseline for evaluating similar programs in a nationwide measure of prevention.

Because a prevention-based evaluation system seeks to more closely connect all preparedness programs with the national objective of preventing acts of terrorism, the chosen indicators must reflect the use of proxies, specific components in the prevention matrix that can be observed. It should be noted that owing to the amorphous dynamics of most evaluation systems, social programs are generally considered experimental - “...social programs are usually best viewed as experiments which can seldom be conducted under identical circumstances over time. Hence, measurements of effectiveness must be adaptive over time in order to be relevant to dynamic systems,”⁹ - and are therefore composed of diverse and often-changing evaluation standards. Because

no prevention program is or will be absolutely effective in preventing each and every act of terrorism, or each and every act of planning an act of terrorism, finite and specific target objectives related to prevention must be first defined. As will be seen, these target objectives are dependent upon a host of variables, the most important among them the particular jurisdictional context in which they are expected to function.

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IV. THE PRINCIPLES OF TERRORISM PREVENTION

During the course of this thesis, we will apply four primary principles relating to the prevention of terrorist attacks to reaching a better understanding of the theoretical nature of terrorism prevention. Some of these principles, such as the First Principle, are commonly known and understood, and serve essentially as a definition of the problem. The need to include the definitional standard of terrorism as a principle on which terrorism prevention principles are based is obvious. Within the context of the Principles, it permits a common theoretical reference point, as well as a refinement of the objectives to which the Principles are being applied. Other principles, such as the Third and Fourth Principles, have been developed as part of this thesis, as a result of our analysis of existing prevention theory.

First Principle

Terrorism is the strategy of using asymmetrical warfare tactics to create fear and disruption with the objective of causing governmental or societal change.

Second Principle

The Prevention of Terrorist Attacks relies on three constituent theories of prevention: Situational, Dispositional, and Experiential.

Third Principle

Situational, Dispositional, and Experiential prevention are hierarchical in arrangement, with Experiential prevention informing Dispositional prevention, and Dispositional prevention informing Situational prevention. Because of this, the loss or diminishment of one or more of the three constituent theoretical elements nullifies the effectiveness of all terrorism prevention operations.

Fourth Principle

The First through Third Principles make it possible, through the application of observable criteria, to evaluate the effectiveness of a terrorism prevention model.

There is one additional principle related to prevention (the Fifth Principle) which we derived while researching this thesis, but have chosen not to use as a base principle for the evaluation of prevention theory. The Fifth Principle is suggested by the findings of this thesis, and therefore falls outside of its limited purpose and scope. It is therefore discussed in greater detail in the conclusion.

Fifth Principle

The prevention of terrorism is not an infallible concept. The inclusion of the experiential prevention factor states that occasional terrorist activity is necessary to maintain higher levels of situational and dispositional prevention.

We will now analyze each of these principles.

V. FIRST PRINCIPLE

Terrorism is the strategy of using the tactics of asymmetric warfare to create fear and disruption with the objective of causing governmental or societal change.

It is necessary for us to employ the definitional standard of terrorism as our First Principle because it is the unique strategic and tactical nature of terrorism, with its emphasis on asymmetric warfare, which we are essentially attempting to prevent. In order to understand the prevention of terrorist attacks, we must first understand what it is precisely that we are preventing. As we earlier determined, it is not as important that we practice the prevention of *terrorism* as it is that we practice the prevention of *terrorist attacks*. Part of the difficulty with defining and implementing a national strategy has been prompted by concerns that because the nation may not possess either the objectives or the capabilities to prevent terrorism as a political phenomenon, it similarly does not possess the objectives or the capabilities to prevent terrorist attacks within the American homeland.

By basing our theoretical construct on the First Principle, however, we can better determine where terrorist attacks might prove most destructive, and identify areas where prevention operations could be most effectively employed. In order to accomplish this, we must first identify the base response elements for terrorist attacks, namely, Interdiction, Response, and Redundancy.

For the purposes of terrorism prevention, *Interdiction* can be defined as the timely application of response and support assets to the interruption of a terrorist organization's objectives. Equally well known as the preemption concept, and variously defined by the studies of Corrado and Davis, Cillufo and Tomarchio, and Rose, interdiction has grown in definition and objective to include active response mechanisms, such as information gathering and intelligence analysis, and the deployment of specially trained and equipped counterterrorism teams.¹⁰ The *National Strategy for Homeland Security* stipulates the expansion of the interdiction discipline through the recognition that, "Actionable intelligence is essential for preventing acts of terrorism. The timely and thorough

analysis and dissemination of information about terrorists and their current and potential activities allow the government to take immediate- and near-term action to disrupt and prevent terrorist acts...”¹¹ According to the *National Strategy for Combating Terrorism*, the, “...prevention of catastrophic terrorism is dependent upon interdiction of people and materials.”¹²

Interdiction can occur at any point in the planning and execution phases, and is preferably conducted during the early stages of a terrorist operation, before any opportunity for expansion or implementation is realized. In his article, “Genesis of Suicide Terrorism,” Atran warns of the difficulties inherent in the interdiction phase: “The last line of defense against suicide terrorism – preventing bombers from reaching targets – may be the most expensive and least likely to succeed.”¹³ But while Atran is correctly pessimistic about the uses of interdiction during the end-game aspects of a terrorist action, he nonetheless recognizes the value of interdiction during earlier stages of the planning and implementation phases. “A middle line of defense, penetrating and destroying recruiting organizations and isolating their leaders, may be successful in the near term...”¹⁴

Response is the ability of a jurisdiction to deploy personnel and other resources to the amelioration of terrorist events. While many terrorism scholars tend to categorize response as a part of interdiction, in that it is through response that terrorist acts are interdicted or thwarted, our definition of response focuses on peri- and post-event factors. In other words, the speed, efficiency, and efficacy by which response assets in a particular jurisdiction respond to unfolding acts of terrorism essentially determines how successful that event is in achieving its destructive objectives. If, for instance, a jurisdiction were understaffed or under-equipped, it would be that much easier for terrorist organizations to exploit those weaknesses – and they can only be considered gaps – in conducting acts of terrorism. In this way, rapid and effective response is a form of deterrence in that terrorist organizations are less likely to attack a particular locale or jurisdiction if it is generally known (or determined by terrorist surveillance operations) that a rapid response will reduce the death toll, or quickly douse the resultant fires, or repair critical infrastructure nodes. The *National Strategy for Combating Terrorism*

recognizes the importance of response in the prevention of terrorism by observing that, “...solid plans, preparations, and immediate response remain key to mitigating acts of terrorism.”¹⁵

In the field of emergency management – or the practice of authorizing an independent agency to serve as an interagency coordinator for preparedness and response operations – the use of the word, “mitigation,” is often taken to reflect not only the lessening of the deleterious effects of catastrophes, but also those measures taken in advance of an event to prevent that event from occurring. For instance, the installation of smoke and carbon monoxide detectors in residences and commercial spaces is an example of mitigation in that through their operation, potential victims are forewarned of the presence of fire or lethal gasses, and are thus able to affect a rapid escape. In this example, smoke and carbon monoxide detectors are mitigation measures taken to prevent the loss of life that all-too-frequently occurs when fire breaks out, or invisible carbon monoxide gasses permeate a location. In either definition, response is an element within the mitigation discipline, and it is not too difficult an undertaking to recognize its inherent life-saving value.

The third and final pillar in traditional prevention theory – *redundancy* – is also the newest. Redundancy refers to that capability, whether on the federal, state, or local level, that deters or prevents terrorist attacks through the need to debilitate multiple locations or assets. The *National Strategy for Homeland Security* contains extensive provisions for improving redundancy through the increased protection of critical infrastructure facilities. “Protecting America’s critical infrastructure and key assets will not only make us more secure from terrorist attack, but will also reduce our vulnerability to natural disasters, organized crime, and computer hackers.”¹⁶ This versatility of approach is, in and of itself, a redundancy, and potently illustrates how vital a critical node the redundancy component is to the prevention strategy.

Primarily applied to issues of infrastructure security, redundancy can further be applied to response assets. For example, following the September 11, 2001 terror attacks, several New York City-based financial services firms, including the New York Mercantile Exchange and the iconic New York Stock Exchange, spent millions of dollars

constructing redundancy locations that would be used in the event another terrorist attack, or a large-scale catastrophe, were to close or disable the organizations' respective trading floors.¹⁷ The importance of redundancy in terms of maintaining economic continuity, as well as making it more difficult for terrorist activities to pose a significant threat to the economic wellbeing of the nation, was recognized by the General Accountability Office, which in early 2003 issued a white paper to the United States Congress. This document, which surveyed 15 primary financial organization – exchanges, clearing houses, electronic communications networks and payment system processors – stated that these industries were at greater risk of disruption because their redundancy locations were situated less than ten miles from their primary operational sites, or that they had no backup centers at all.¹⁸ In a follow-up report issued in September of 2004, the GAO concluded that while progress had been made, "...four of the eight large trading firms...had all of their critical trading staff in single locations, putting them at greater risk than others of a single event incapacitating their trading operations...actions were taken to improve the resiliency of the telecommunications service critical to the markets...Maintaining telecommunications redundancy and diversity over time will remain a challenge."¹⁹

While the redundancy doctrine has been principally applied to critical infrastructure nodes, the same logic is viable when discussing federal, state, and local response assets. These assets can extend from backup locations for critical government or response operations, such as New York City's alternate Emergency Operations Center (EOC), to Alternate Seats of Government (ASOG), which provide secure locations for the purposes of Continuity of Government (COG) planning and operations, to redundancy in specific response applications, like hazardous materials (HAZMAT) units. By including redundancy as a primary element in the prevention matrix, jurisdictions can protect the continuity of their public safety response operations, while simultaneously deterring or dissuading terrorist operations planning by presenting additional layers of protection. Adapting the example set by Geis and Huston, deterrence is not simply predicated upon size, but also upon response versatilities.

Like an enormous theoretical gearbox, the definition of terrorism as a type of warfare committed against a nation's interdiction, response, and redundancy capabilities permits a greater understanding of the dynamics of terrorism, and how it can be defended against. If terrorism is essentially waged against those environments in which interdiction, response, and redundancy are integral (i.e., transportation, financial, governmental networks), then any theoretical terrorism prevention concepts must have applicability to the unique characteristics, and results of, terrorist activity.

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VI. SECOND PRINCIPLE

The Prevention of Terrorism relies on three constituent theories of prevention: Situational, Dispositional, and Experiential.

Social scientists have long recognized that there are two primary schools of deterrence theory, *situational deterrence* and *dispositional deterrence*. And as evidenced by the long history of crime prevention strategies, most criminal events – and here we can substitute terrorism for criminal – are composed of two components or stages based upon these situational and dispositional elements.²⁰ In his analysis of situational crime prevention strategies, Clarke outlines the two components: “...first, a description of the nature and distribution of criminal opportunities (Sparks, 1980) and, second, an account of how offenders’ decisions are affected, not merely by facts of upbringing and personal history, but also by the circumstances and situations in which they find themselves.”²¹ The first assessment, which is clearly applicable to the opportunistic aspects of terrorist activities, is drawn from situational factors. The second, which is more traditionally dispositional in nature, refers to the contextual motivations for terrorism, including geopolitical characteristics. There are, additionally, subsets of these two theoretical polestars, including, “law enforcement, and developmental, community, and situational prevention.”²²

A. SITUATIONAL PREVENTION

The oldest and perhaps most obvious prevention strategy involves situational factors, or those elements of crime and terrorism that are based upon what could be called circumstantial or situational contexts. Clarke, who has spent many years analyzing the systemic mechanics of crime prevention, characterizes situational prevention as, “...measures (1) directed at highly specific forms of crime (2) that involve the management, design, or manipulation of the immediate environment in as systematic and permanent a way as possible (3) so as to reduce the opportunities for crime and increase its risks as perceived by a wide range of offenders.”²³

We have all practiced situational prevention in our daily lives. The locking of the front door when we leave the house, the snuffing of lighted candles when we leave the

room, the training of a watch dog – these are just three of many examples of situational prevention. By making it more difficult to gain access, or prevent a fire from occurring, or providing us with the early warning of a bark, we are changing the situations under which destructive or injurious incidents can occur.

This logic has served as the definitional construct for most contemporary crime reduction programs, such as those aimed at reducing skyjacking incidents, shoplifting, and even suicide. In the example of skyjackings, the deployment of advanced detection technology and practices has significantly reduced the number of terrorist or criminal operatives who are able to access aircraft and airport facilities with weapons and explosive devices. “Some sorts of crime have been dramatically reduced by removing not the targets but the means to commit the crimes. For example, the incidence of aircraft ‘skyjacking’ has been reduced from an annual average of about seventy in the early 1970s to the present rate of about fifteen a year by screening passengers and baggage...”²⁴ In a celebrated 1988 study, Clarke and Mayhew provide compelling evidence that, “Between 1963 and 1975 the annual number of suicides in England and Wales showed a sudden, unexpected decline...at a time when suicide continued to increase in most other European countries. This appears to be the result of the progressive removal of carbon monoxide from the public gas supply.”²⁵

Situational prevention is also often practiced aboard commercial vessels engaged in trade in waters known for the large number of pirates. This includes the outfitting of merchant vessels with electronic tracking devices, as well as the posting of increased deck patrols, the use of fire hoses, the full lighting of the vessel, and even large sums of money that can be given to the pirates should they successfully board the vessel. In this particular instance, situational prevention is primarily geared toward preventing the death or injury of any of the ship’s crew members, and the loss of the vessel and its cargo to either piracy or destruction. It is not aimed at preventing piracy, or as a first line of defense, necessarily preventing the pirates from accessing the vessel.²⁶

But for the purposes of law enforcement, situational prevention – not dispositional - has been the dominant theoretical dialectic of the crime prevention rubric. In 1983, when the British Home Office established its Crime Prevention Unit, it was interpreted to

mean that, "...situational crime prevention has grown rapidly as a viable strategy for reducing the occurrence of crimes."²⁷ On the other hand, there are those observers who have rightly suggested that no crime prevention program is always effective, and that in order to improve their degree of effectiveness, an interagency, multi-capability – or Chimera – approach is required. Tonry and Farrington reaffirm the viability of this method by stating that, "...there is an emerging consensus among researchers and public officials in many countries that law enforcement's potential effects are limited and modest and that public safety policies that rely solely or primarily on law enforcement are incomplete and insufficiently protect the public."²⁸ This suggests that in order to prove effective, prevention strategies must be broad in scale but specific in implementation, and should bridge the operations of several agencies or organizations, as well as different approaches to the combating of terrorism.

In February of 1993, terrorist operatives attempted to destroy the North Tower of the World Trade Center through the detonation of a truck bomb in a parking garage beneath the Trade Center complex. In response, the World Trade Center's operators prohibited trucks from entering the parking garage. This is an example of situational prevention. The opportunity to launch a type of terrorist operation (vehicle-borne bombing) was lessened (i.e., prevented) by implementing physical security measures. Using the evaluative criteria outlined in the Fifth Principle, we can quantify these actions in a manner beyond that of simple observation.

But as evidenced on September 11, there are limitations to the efficacy of situational prevention methods. This is not due to a flaw or deficiency in the concept of situational prevention, but rather in its limited scope. Because it is situational, it is naturally limited by its immediate circumstances or environment. For example, improved situational prevention measures at the airports where the flights originated, as well as aboard the individual aircraft themselves, may have prevented the successful hijacking of these aircraft; but because situational prevention methods were not superior to either the objectives or capabilities of the hijackers, the World Trade Center's own situational prevention methods were likewise rendered insufficient.

This is the logic that supports and yet hinders the dynamics of situational prevention; because it is situational, it is limited in range to its immediate environment and circumstances. And because, as seen in our example, it is subject to all the variables of all the situations and circumstances that daily occur in life, it can never be completely and adequately used as a primary prevention concept.

In the past, several attempts have been made to define a prevention concept that does not share the same deficiencies of scope as situational prevention. Deterrence is one such example, and is probably the most pervasive theory of its kind. Deterrence is the practice of deterring criminal or terrorist activity through the imposition of programmatic and security measures that make it difficult, if not impossible, for either criminals or terrorists to achieve their respective objectives. “Law enforcement has a significant deterrent effect on robberies, burglaries, and motor vehicle theft.”²⁹

Deterrence theory perhaps found its most significant – and successful – role in the nuclear deterrence strategies of the Cold War (1946-1986).³⁰ Tonry and Farrington attribute the fundamental processes of criminal justice to the concept of general prevention, where, “...deterrence is offered as the primary purpose and justification for the maintenance of state-administered systems of criminal punishment,”³¹ in that the fearful prospect of state-sanctioned penalties ranging from the imposition of fines, to imprisonment, to execution is sufficient deterrent to the conduct of criminal activity. In Book 1 of *The Discourses*, “How Necessary Public Indictments are for the Maintenance of Liberty in a Republic,” the famed Renaissance political theorist, Niccolo Machiavelli, suggests that fear of punishment can serve as a strong deterrent to, “...such citizens as have committed any offense prejudicial to the freedom of the state. Such an institution has two consequences useful in a republic. First, for fear of being prosecuted, its citizens attempt nothing prejudicial to the state...”³² And Zimring and Hawkins, drawing upon the deterrence through strength paradigm, define deterrence as, “...the declaration of some harm, loss, or pain that will follow noncompliance.”³³ As manifested by the Cold War example, where the United States and the former Soviet Union stridently sought the numerical and tactical advantages inherent in the number of nuclear warheads and their respective destructive capabilities, a strategy of deterrence is most effectively realized

from a position of size or strength. Studies conducted by Geis and Huston (1983) on the role of bystanders as defined by the Good Samaritan laws in California, indicate that the physical size of participants plays a significant role in the successful outcome of such activity. “The important variable...was the size and strength of the bystander, vis à vis the victim.”³⁴ The Islamist terrorist organization Hamas is aware of this connection, as indicated by an adage frequently employed by the group: “Why hunt lions when there are so many sheep about?”

But just as deterrence has been successfully used as a primary prevention strategy for centuries, it has an equally long history of incompleteness, debate, and even failure. An analysis prepared by the British Home Office in 1991 attributed some of the challenges faced by strategic deterrence to the spontaneous nature of many crimes, and even the psychology and character of the respective offenders themselves. “Deterrence is a principle with much immediate appeal...But much crime is committed on impulse...and it is committed by offenders who live from moment to moment...”³⁵ If the Home Office’s premise is accepted, then deterrence is, in fact, an effective prevention model against terrorism because terrorism, with its long planning and organizational requirements, can not be successfully committed on impulse.³⁶ Title 22 of the US Code further recognizes the planning element inherent in acts of terrorism when it defines terrorism as, “...*premeditated*, politically motivated violence perpetrated against noncombatant targets by subnational groups or clandestine agents, usually intended to influence an audience.” [Author’s italics].

Considering the relative efficacy of the Cold War strategy of deterrence on the prevention of a nuclear exchange between the United States and the former Soviet Union, it is not surprising that following the devastating terrorist attacks of September 11, 2001, the United States in part adopted the deterrence model for application to this new form of asymmetric conflict. In 2002, the federal government promulgated the *National Strategy for Homeland Security*, which established three objectives that are derived from, and apply to, the prevention of terrorist acts: “1) Prevent terrorist attacks within the United States; 2) Reduce America’s vulnerability to terrorism, and; 3) Minimize the damage and recover from attacks that may occur.”³⁷ In February of 2003, the federal government

further issued the *National Strategy for Combating Terrorism*, which relies heavily on the doctrine of deterrence to mitigate acts of terrorism, and essentially reiterates the three strategic objectives outlined in the *National Strategy for Homeland Security*. Because the long history of crime prevention programs has evidenced that no prevention policy is 100% effective under all conditions and situations, the *National Strategy* calls for the, “...prevention of catastrophic terrorism,” or those acts of terrorism that rely on large-scale activities to achieve their objectives. It does not focus on acts of what we call micro-terrorism, or those acts conducted by single individuals that result in less than 100 deaths.

Moreover, as the events of September 11 illustrate, by itself the effectiveness of situational prevention practices are often limited by their range. In order to expand the situational range, in order to fill this gap in a terrorism prevention system, we must apply an additional layer of prevention, one known as Dispositional prevention.

B. DISPOSITIONAL PREVENTION

Sometimes referred to as social prevention, dispositional prevention, unlike situational prevention, tends to emphasize the elimination or amelioration of social ills or inequalities as a method for reducing or preventing crime. A product of developments in psychology and community relations, dispositional prevention, “...seeks – though with little demonstrated effect (Morris and Hawkins 1970; Wilson 1975) – to ameliorate the social, psychological, economic, and educational deficiencies that are thought to give rise to criminal dispositions.”³⁸ Tonry and Farrington take a similarly dim view of the efficacy of dispositional prevention programs, attributing their concerns to the more finitely-codified community prevention subset, and the difficulties in evaluating such a broad range of inputs in terms of a long-term outcome. “...the effectiveness of community prevention is less convincing than for situational or developmental prevention. This is at least partly because of the poor quality of evaluations of community prevention strategies, which makes it difficult to draw lessons from the future of perceived failures.”³⁹ And yet, because of the experimental nature of many social programs, it is perhaps necessary to account for dispositional factors in the prevention of terrorism. A 1972 report issued by the Committee on Measures of Effectiveness for

Social Programs stated that, "...social programs are usually best viewed as experiments which can seldom be conducted under identical circumstances over time. Hence, measurements of effectiveness must be adaptive over time in order to be relevant in dynamic systems."⁴⁰

But while we cannot always effectively address the dispositional aspects or root causes of terrorism, we can adapt the theoretical premise of dispositional prevention for the purposes of hindering some of the more deleterious social effects of terrorism, including the ramifications of specific acts of terrorism. Using dispositional prevention theory, it is possible for us to devise programs geared toward preventing (or at least, managing) the magnitude of fear that often defines the age of asymmetric warfare. If, for instance, terrorist organizations were to realize that terrorist acts do not always engender paralyzing and disruptive fear on the part of their victims – if terror were removed from terrorism – then the objectives of terrorism would be neutered. The organizational theorist, James Q. Wilson, suggests as much when he writes, "Prevention and educational programs can reduce supply as well as demand."⁴¹ While Wilson's findings do not as readily apply to the prevention of terrorism on a dispositional level, they do support the understanding that they can prevent a degree of the "demand" for terrorism; here, demand is defined not as the satisfaction of a need, but as the destructive by-products of its occurrence.

As suggested by Schneider, the traditional prevention policies of "rehabilitation" and "incapacitation" – which are conceptually linked to the traditional definition of dispositional theory - are of limited value in combating terrorism, with the latter containing, through the interdiction strategy, more practical import than the former. While some terrorism scholars have suggested "in-group policing" strategies designed to appeal to the more moderate elements within terrorist organizations, or those contemporary cultures which rely on terrorist strategies to achieve their political objectives, there is little evidence that the rehabilitation of individual terrorists or of terrorist organizations has or will yield the desired results.⁴²

Incapacitation, on the other hand, is much closer to the prevention mark, and has been practiced as an integral part of the present campaign against global terrorism. Since

the terrorist atrocities of September 11, 2001, the United States and its allies have aggressively pursued al-Qaeda's (the terrorist organization that by its own admission planned and conducted the September 11 attacks) membership, and has either killed or captured much of its top leadership and individual cadres. As the continuing spate of terrorist outbreaks in Iraq and Afghanistan indicate, incapacitation – while in essence a sound and effective strategy – is not the silver bullet it was once believed to be. It is essentially a long-term strategy, one whose effectiveness is often hampered by displacement, or the phenomenon, well known to law enforcement theorists and practitioners, whereby incidents of crime or terrorism decrease in one location, but increase in others. Incapacitation, and by extension, interdiction, is further offset by increases in organizational proficiency and membership recruiting.

In many respects, the September 11 terrorists were able to exploit weaknesses in both our situational and dispositional prevention systems. In order to reconcile these differences, we must reassess our understanding of dispositional prevention theory, and instead determine that *for the purposes of terrorism prevention, dispositional prevention relies on changing the environment in which situational prevention exists.*

Whereas traditional dispositional crime prevention theory held that in order to be effective, dispositional methods needed to change the environments that produced criminal behavior, we are defining dispositional prevention as applied to the prevention of terrorism to represent those measures taken to coordinate and enhance situational prevention techniques.

Let us take a moment to analyze why for our purposes it is necessary to redefine the traditional definition of dispositional prevention. Since dispositional crime prevention theory was first introduced, it has focused on preventing or controlling crime by making changes in the environments in which crime is able to grow. Poverty and political disenfranchisement are two traditional dispositional causes for crime, and there is sufficient evidence to suggest that the application of financial and other resources can have a positive, if limited and often expensive, effect on crime prevention and reduction figures.

But if this same dispositional logic is applicable to the dispositional prevention of terrorism, why have a majority of terrorist cadres actually been individuals drawn from the educated middle-class? Because according to our first principle of terrorism prevention, terrorism is politically motivated, its dispositional manifestations must be drawn from a different set of strategic and tactical motivators. Those individuals who are dispositionally predisposed to commit acts of terrorism are therefore dispositional for other reasons, primarily political, which defy traditional dispositional remedies.

The logical premise that disposition, therefore, changes with circumstances does not allow it the constancy to be adequately measured. It is akin to the analogy where a child has entered our kitchen, and to prevent that child from being burned by the hot stove, we remove the stove entirely. Under traditional dispositional precepts, we have in fact practiced dispositional prevention by changing the environment through the removal of the stove.

And yet, we have also prompted the question of whether or not by removing the stove, we have so changed the environment that we can no longer call it a kitchen. Of the two traditional crime prevention theories, dispositional theory has always been considered the hardest to evaluate for effectiveness, and the most expensive method for achieving that effectiveness. One of the ways in which dispositional prevention theory does not logically support its objectives is through displacement, or the concept that by improving the physical or economic environment in one area, crime and its dispositional roots are merely displaced or transferred to another. Here our stove in the kitchen analogy is a sound logical proof; by removing the stove from the kitchen to the bedroom, we have actually accomplished little by way of prevention. We still need to turn on the stove to cook, and our curious child will enter the bedroom as easily as the kitchen.

In order to logically reconcile these variables with what is in essence an important prevention theory, we have revised the traditional definition of dispositional prevention to describe those situational measures taken in response to changes in our dispositional thinking. The contradictory aspects of traditional dispositional crime prevention theory indicate that while the concept of dispositional theory is possible, affecting it on individuals or groups by second or third parties is ineffective. In order to realize its full

benefits, it is therefore necessary that we apply it to ourselves, to those who would seek to prevent terrorist attacks, not those who perpetuate them. In its simplest form, this contention posits that dispositional prevention theory is much more useful when applied to what we can, in fact, dispositionally influence rather than to those who must be dispositionally changed by indirect or distant means.

Accordingly, those industry-wide measures taken in the airline industry to improve situational prevention systems – improved ground security, improved passenger screening, flight deck door hardening, enhanced crew training – are an example of the results of dispositional prevention. Rather than attempt to change the disposition of terrorists in order to prevent terrorism, we have chosen to change our own disposition toward preventing terrorism, thereby allowing us to enhance our prevention effectiveness through increased coordination of our objectives and capabilities.

Since September 11, no aircraft that has implemented the new situational and dispositional prevention measures has been hijacked. Were these situational prevention methods not coordinated by the larger change in dispositional prevention policies and practices, this degree of effectiveness could not be realized. It is further interesting to note that logically, these methods are working. In 2002, a British national, Richard Reid, attempted to destroy a transatlantic jetliner by detonating explosives contained within his shoes. The situational prevention improvements realized by the dispositional prevention mandate were so effective that no attempt could obviously be made to duplicate the tactics used on September 11.

C. EXPERIENTIAL PREVENTION

We have been able to deduce the existence of experiential prevention in much the same way as the planet Pluto was discovered in 1930. By taking observations of perturbations in the planet Neptune's orbit, astronomers were able to deduce the existence of another entity, most likely a planet, that could not itself be seen, but whose influences and effects could nonetheless be predictably observed through the actions of neighboring bodies.

By studying the theoretical and dynamical relationship between situational prevention theory and our revised dispositional prevention theory, we have been lead to

identify the existence of a third branch or school of prevention theory, one that we are calling *Experiential Prevention*. We know that experiential prevention must exist because of the behaviors and observable results of the other two concepts, situational and dispositional prevention, that have been defined, and can be observed.

For instance, we know what situational prevention is, but why and how does it actually work? We have defined and redefined dispositional theory, but again, what influences its recognition and implementation? Because both situational and dispositional prevention are inherently defined by change, what series begins the starting point, and where does that change lead?

Our mysterious “planet,” therefore, must be experience, or perhaps, the awareness of the experiences associated with terrorism and acts of terrorism. This awareness is what we are calling experiential prevention, or the concept of prevention that is based upon experience or observable connections between certain behaviors and results. In its simplest form, experiential prevention occurs when one (and by extension, groups composed of individuals) experiences terrorism, and is able to evaluate situational and dispositional prevention strategies and tactics in light of this experience and its enhanced awareness.

Here we may return to our curious child in the kitchen: situational prevention occurs when we possess the capability to turn off the hot stove to prevent the child from being burned; dispositional prevention occurs when we know to turn off the stove, and possess the desire and disposition to do so; and experiential prevention occurs when we do not practice either situational or dispositional prevention, but rather allow that child to touch the hot stove, experience the painful consequences of its actions, and therefore develop a self-awareness that in its manifestation is experiential prevention. In the latter example, the child will be much less likely to touch the stove the next time, thereby possessing the dispositional motivation to practice a form of self-situational prevention.

The dynamics of the Intelligence gathering and analysis function, for instance, are a logical proof for the mechanics of experiential prevention. Intelligence, which falls under the Interdiction rubric of our First Principle, relies on the increased awareness

provided by experience, or the effect of personal or group observation. As more information is gathered and analyzed, the chances of increasing the effectiveness of situational and dispositional prevention methods are greatly improved. We have a much larger chance of apprehending terrorist operatives because of this increased knowledge, and the interdiction operations that can be implemented because of it.

In this way, we can see how Intelligence is not primarily situational or dispositional in mechanics, but rather, experiential in effect. It realizes its effectiveness through regular, daily exposure to the activities and thinking of terrorist organizations. We can and do use Intelligence for situational prevention – increased security, physical plant hardening, personnel and resource deployment – and for dispositional prevention purposes, in that increased knowledge through experience leads to the development and implementation of policies and administrative practices that provide the dispositional prevention function. But neither situational nor dispositional prevention concepts explain how Intelligence works within the prevention matrix; experiential prevention, however, allows for Intelligence to be evaluated through a series of criteria based on longevity and resource deployment, including HUMINT resources.

We earlier discussed Richard Reid, and his unsuccessful attempt to destroy a transatlantic passenger jet with an explosive pair of shoes. Had Reid been successful in his mission, we may never have known what destroyed that aircraft. We would have speculated and held inquiries, and most likely sought to retrieve the wreckage from the seabed, but we would never have known with certainty where our present dispositional and situational prevention measures failed. It is entirely possible, therefore, that this terrorist modus operandi would have been subsequently used several times, with possibly equally fatal and mysterious results.

This is the clearest logical proof we have that experiential prevention is a viable component in the development of our Second Principle. Because of the experience of Reid's attempt, the awareness of his technique, we were subsequently able to use dispositional prevention (through the organizations involved with airline security) to enhance situational prevention measures (the removal of shoes during the screening process) to improve the efficacy of our overall prevention program.

VII. THIRD PRINCIPLE

Situational, Dispositional, and Experiential prevention are hierarchical in arrangement, with Experiential prevention informing Dispositional prevention, and Dispositional prevention informing Situational prevention. Because of this, the loss or diminishment of one or more of the three constituent theoretical elements nullifies the effectiveness of all terrorism prevention operations.

According to our logic, as an independent prevention concept, experiential prevention is difficult if not impossible to implement without reference to both situational and dispositional prevention theory. While a nation may experience an act of terrorism and in the course of doing so be made aware of deficiencies (and conversely, strengths) in its situational and dispositional interdiction, response, and redundancy objectives and capabilities, the simple act of increased awareness is not in all cases sufficient to result in the prevention of terrorist activity. As we will prove, there are many instances in which experience and its resulting awareness is effective as a form of deterrence, both in the example of the terrorist organization that carries out attacks and is punished, and in those organizations that are deterred from launching their own attacks by the awareness of what has happened to others as a result of committing terrorist attacks.

And yet, as we have suggested, the best form of prevention is not an offensive posture that relies on the activities of second or third parties, or upon indirect means of enforcement, but upon that which we can implement using a fusion of our objectives and capabilities in a defensive attitude. It may seem paradoxical, but it appears from our principles and that of deterrence theory that, as the defensive quality of prevention measures increases, the offensive quality increases, as well.

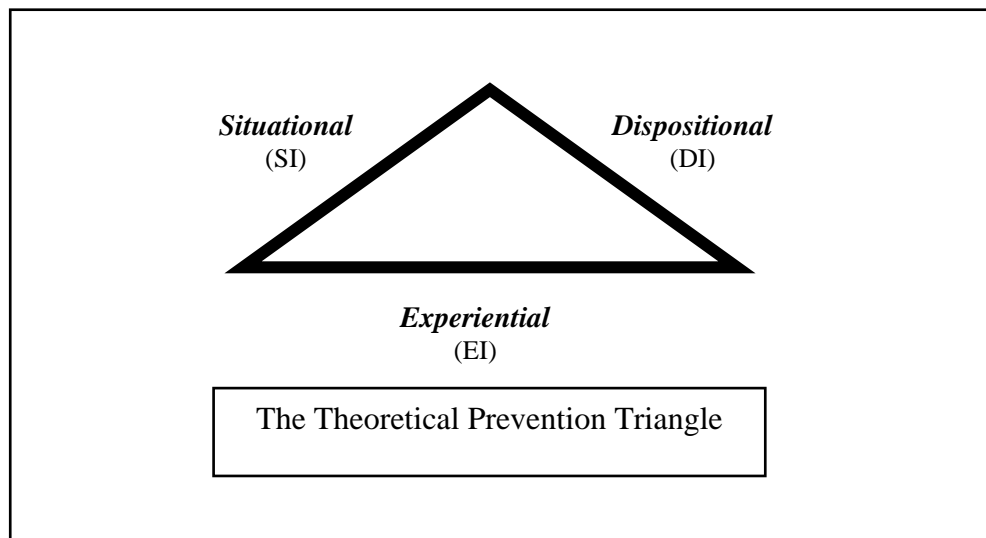
This logic, in turn, allows us to recognize the importance of experiential prevention in informing or evaluating situational and dispositional prevention concepts. As experience and increased awareness of terrorism and terrorist activity improve or result in positive changes to our dispositional prevention systems, situational prevention, which is the lowest (in the hierarchical scale as determined by its function) additionally improves. Therefore, the enhancement of situational and dispositional prevention

practices because of the effects of experiential prevention indicates that while, like the others, it cannot operate very effectively as a single component, its place within any comprehensive terrorism prevention model is essential.

We have seen in our logic examples for the Second Principle how situational, dispositional, and experiential prevention are compatible in terms of their objectives, capabilities, and definitions. Now we must establish the logical means by which the dynamics between the three components can be conceptualized, and their relationship to one another weighted according to their respective effects on one another.

The self-referential quality of the Austrian logician Gödel's Incompleteness Theorems forms the theoretical inspiration for our construction of the Third Principle. While the three definitions of situational, dispositional, and experiential prevention serve to define terrorism prevention concepts, the arrangement of the three concepts necessitates a triangular graphical model. This is due to the hierarchical nature of the dynamics between the three prevention concepts. We could render the model as a linear hierarchy, but this would not place the Experiential prevention (EI) function as a divisor of the remaining two legs, thereby necessitating a triangular graphical representation.

Figure 1. The Theoretical Prevention Triangle



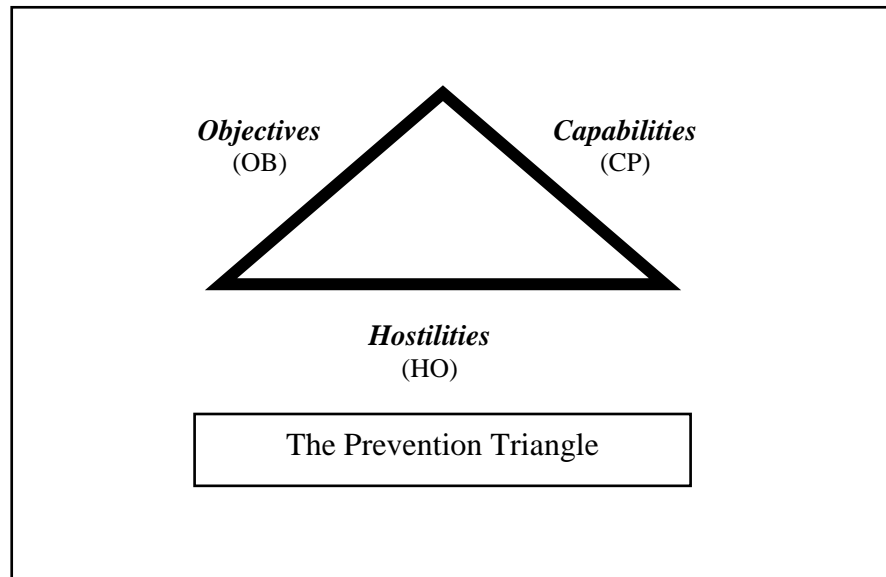
The Theoretical Prevention Triangle allows us to see an additional layer of interaction, with situational and dispositional prevention being “evaluated” or informed by the precepts of our experiential prevention concept. We have seen in the enhancements undertaken to situational and dispositional prevention methods subsequent to September 11, 2001, and in response to the Richard Reid incident, how experience, or increased awareness of those situations that can be ameliorated or mitigated by situational and dispositional prevention methods, is used to evaluate gaps in situational and dispositional prevention programs.

This logical deduction means that any graphical model for evaluating the effectiveness of prevention programs must also include within it the means of evaluation. Just as the experiential leg of the theoretical triangle informs and is informed by the situational and dispositional legs, it is only through the inclusion of the experiential proxy that we are able to produce self-referential criteria that serve as logical constants.

Interdiction and Response are primarily situational in nature, while Deterrence and Redundancy are at once both situational and dispositional, with, we believe, a slight emphasis on the latter. They are situational in that they are often characterized by specific responses to events, and hence possess a near-term reactive quality; and they are dispositional as they imply a change in the way terrorism is perceived, and often rely on long-term solutions in order to prove effective. A prevention mandate that seeks to diagnose and evaluate both situational and dispositional factors immediately becomes a part of each.

For a logical proof of this conceptual relationship, let us return to our example of September 11, 2001. For illustrative purposes (the concept of HO or Hostilities), we will also need to anticipate an element in our conceptual model, the Prevention Triangle. As evidenced by the findings of the 9/11 Commission and other investigations, there were numerous points during the planning and operational phases when the operation could have been disrupted or even stopped. Under our conceptual system, this would have been accomplished through traditional forms of situational and dispositional prevention.

Figure 2. The Prevention Triangle



Although our overall objective may have been to prevent acts of terrorism, the component situational prevention activities, uncoordinated by a lack of capabilities (including organizational) of a dispositional prevention nature, resulted in the Hostilities component overcoming these deficiencies in planning and execution, and resulted in the worst terrorist attack yet seen in contemporary history. Just as the experiential leg serves as an evaluative constant to the prevention concept, Hostilities serves the same function within efforts to practically apply prevention as part of the Prevention Triangle concept.

Our understanding of this relationship, therefore, allows us to use (HO) as a mathematical divisor. It is an easy logical argument to follow. If the combined components of (CP-SI) and (OB-DI) are greater than (HO-EI), then positive prevention is or will occur. Clearly, while improvements had been made to the World Trade Center's state of situational prevention after the 1993 attack, in 2001 they were offset by lingering deficiencies in the OB-DI columns, thereby lowering the total sufficiently enough to permit HO the advantage. Therefore, in order to offset HO, both OB and CP must be enhanced.

VIII. FOURTH PRINCIPLE

The First through Fourth Principles make it possible, through the application of observable criteria, to evaluate the effectiveness of a terrorism prevention program based upon the fusion of Situational, Dispositional, and Experiential prevention theories.

Now that we have defined the theoretical basis for the prevention of terrorist acts through the Theoretical Prevention Triangle, we must turn our attention to the theoretical foundations of an evaluation system. Here our objective is to determine, based on the literature of prior experience, what evaluation systems have been developed and implemented for previous crime prevention theories and programs. During this process, it will be necessary to keep in mind the four principal tenets of prevention – *deterrence, interdiction, response, and redundancy* – in order to derive indicators that will serve as outputs leading to the desired end outcomes.⁴³ Throughout this process, it is additionally important to comprehend and recognize the differences between examples of *situational, dispositional, and experiential prevention*, and derive evaluative measures that are unique to the operational nuances inherent in each example. And based upon our findings, we will be able to extract more specific indicators, and integrate them into a cohesive evaluation model, the Prevention Triangle.

As applied to our present purpose, evaluative theory is nearly as old as crime prevention theory itself. Sheldon and Eleanor Glueck, in their 1936 analysis, *Preventing Crime*,⁴⁴ state, “...no system has been established which accurately measures the results of crime prevention programs. It will never be possible to prove what specific crimes have been prevented, but it is true that for the Crime Prevention Bureau, the number of juveniles taken to court for serious offenses showed a marked decline.”⁴⁵ In 1935, Bellman proposed, “...the rating of a police organization according to certain standards, and the improvement of service. This is to be done through the application to all police departments of a standard rating scale on a basis of points.”⁴⁶ Bellman drew his inspiration for what he called, “The German theory,” where, “...if the performance of any function is entirely unsatisfactory, no point will be awarded under that category.”⁴⁷ Three years later, Parratt recommended a “Scale to Measure Effectiveness of Police

Functioning,” which presented, “...a picture of police effectiveness in terms of public approvals and disapprovals.”⁴⁸ Although they sought to evaluate different aspects of the policing function, both the Bellman and Parratt methods relied on questionnaires and interviews for their respective base data, as well as some quantitative measures.

In 1941, Heidinsfield unveiled his analysis, “The Role of Statistics in Evaluating Community Efforts on Crime Prevention,” in which he concluded that, “Although there is no single index that will give a comprehensive picture of police effectiveness, a satisfactory record system will yield a number of items of information useful in administration control. The most significant information regarding crimes against the public morals, disturbance of the peace and similar offenses, is the number of persons charged by the police.”⁴⁹ And in their 1982 evaluation study, Jobson and Schneck returned to the Parratt model with their, “Constituent Views of Organizational Effectiveness: Evidence from Police Organizations.” In this application, the researchers derived ten criteria that would be used to measure the effectiveness of the policing function as observed by the general public,⁵⁰ including hierarchical evaluation, crime rate, solve rate, perceived effectiveness, seriousness of crime, safety in environment, process behavior, task performance, importance of organization, and participation in community.⁵¹

Much of our contemporary evaluation literature, however, is drawn from the “Crime Analysis” approach advanced during the 1980s by Ekblom and others. The Crime Analysis rubric, drawing upon largely situational examples, “involved obtaining detailed information about local patterns of crime, devising prevention strategies appropriate to local problems in the light of these analyses, implementing the strategies, and evaluating the effects of the prevention strategies on crime.”⁵² Tonry and Farrington describe the current paradigm as, “...the systematic strategic effort of the last decade to develop and test situational techniques and the increasingly widespread recognition that situational approaches can complement law enforcement approaches.”⁵³

Whether applied to the prevention of crime or the prevention of terrorism, the development of a practical evaluation system is a difficult undertaking. The challenges stem not so much from deficiencies or variances in prevention theory and strategies, but

rather from the vast number of factors to be evaluated, and the innumerable influences that define and drive those same factors. “In evaluating the success of prevention strategies,” write Tonry and Farrington, it is important to investigate the boundary conditions under which they work. For example, a strategy may be effective in one place or at one time but not in other circumstances, perhaps because of societal or contextual variations...”⁵⁴ Similarly, Clarke adds, “The difficulty posed for situational measures is one of the vast number of potential targets combined with a generally low overall level of security.”⁵⁵ And Hatry cautions that, “...governmental programs seldom can be adequately evaluated by attempts to compress multiple measures into a single criterion such as a single monetary measure.”⁵⁶

We can also see from our readings that the concept of experiential prevention is observable in the ways crime prevention theory and evaluative practice have evolved based upon the observable response to, and awareness of, their perceived and actual effectiveness. Since most literature on the subject – including this thesis – is based upon the adaptive use of successful theories or concepts, the idea that experience can itself serve as a qualitative measure, that it has a quantifiable quality to it, is very important to constructing the prevention hierarchy described in our Third Principle.

And not every scholar has been convinced of the efficacy of situational prevention theory or practice. In his 1990 analysis of the relationship between drugs and criminal activity, James Q. Wilson writes: “Some people argue that we must ‘stamp out’ drug abuse in order to reduce crime, break up criminal gangs, and improve public health. But there is no reason to believe that vigorously enforcing the drug laws will achieve any of these goals and many reasons to think that they may make these matters worse.”⁵⁷ Nor does Wilson subscribe to the primary aspects of developmental protection, suggesting that, “...attempting to suppress the use of drugs is costly – very costly.”⁵⁸ This approach to prevention is in keeping with those beliefs espoused by Schneier and others, and frequently manifests itself in the limited or select application of prevention strategies.

Still, each of the evaluation theories proposed over the last century have elements that are adaptable for the purposes of designing a method to evaluate prevention. From Jobson and Schneck, we derive an understanding of the importance of functional

observations on the evaluation of prevention. “In this undertaking criteria of effectiveness will be examined from the perspectives of both internal participants and external constituents and thus begin to fill a major void in past investigations of effectiveness.”⁵⁹ This includes an adaptation of utility theory, whereby, “Recent developments in utility theory give some appreciation of the two main directions taken to measure effectiveness of non-profit entities, 1) adequacy or inadequacy ratings, 2) cost benefit measures.”⁶⁰ The application of the utility theory to a program aimed at prevention would indicate the use of evaluators that are measured in terms of resources, or outputs. From Tonry and Farrington, we obtain the essence of an evaluation system, and the role that system has on the prevention of terrorism. “In evaluating situational prevention programs, it is essential to plan to measure possible displacement and diffusion of benefits. In addition, it would be desirable to measure possible indirect prevention, for example, where a reduction in drug use leads also to a reduction in burglary and robbery...”⁶¹

Essentially, the authors are suggesting that the prevention of terrorism may not be a direct result of prevention efforts, but rather a by-product of programs that have a much broader applicability to the suppression of crime and other situational factors. Jobson and Schneck further tell us that, “First, indicators of organizational effectiveness have centered on the utilities of organizational participants, such as incumbent decision makers, directors, and employees, rather than on the desires of client groups and the public interest. Second, most of the data available for criteria research have either been collected or supplied by the focal organization.”⁶²

We must define the theoretical foundations for evaluation. Once this has been completed, an evaluation system can be adapted for use in the terrorism prevention mandate. The challenges inherent in a prevention evaluation program are obvious. First, there is the pervasive philosophical and political debate as to whether or not prevention can be implemented, and whether or not it can be evaluated. As viewed by Schneier, “Prevention is what everyone thinks about first, but it’s actually the hardest aspect of

security to implement successfully, and often the most expensive...You can make it harder for the kidnappers, but you can't stop them totally. You simply can't buy enough prevention, and the trade-offs are too great.”⁶³

Second, a series of criteria to be used for the purposes of evaluation must be identified. Third, an objective system employing these criteria must be prepared. As there are certain indicators that can be used to evidence the efficacy of a terrorism prevention program, it should not prove too difficult to derive a series of criteria for the purposes of evaluation. In 1982, Jobson and Schneck defined the theoretical challenges inherent in the selection of evaluation criteria. “The development and use of criteria is essentially a political decision that ultimately reflects someone's values (Campbell, 1977; Scott, 1977). If the selection of criteria is never purely an objective research task, then it is partially a function of choice and values; the choice of the particular organizational theories and models used to guide research, out of a number of possible alternatives, and the value judgments of the researchers.”⁶⁴

There is a further diagnostic quality to this approach, one voiced by Tonry and Farrington: “It is important to design evaluations to discover why strategies are immediately effective and why effectiveness may then decrease.”⁶⁵ The Committee tells us that, “...measures of effectiveness fall into two categories: 1) those that construct an index of suitability, desirability, sufficiency (or of their absence); 2) those that monetize the welfare function in order to generate time discounted benefits to society and that then compare these benefits to costs by several more or less acceptable techniques.”⁶⁶ And that, “A second more common approach to measures of effectiveness proceeds from the sum of the utility functions, i.e., the welfare function, and using market prices for inputs and products assigns time-discounted, dollar values to their benefits.”⁶⁷

Hatry outlines a number of different evaluation approaches – some of which rely on the evaluative relationship between workload measures and physical standards – and each of which he dismisses in favor of an objectives-based evaluation matrix.⁶⁸ Hatry cautions that, “Evaluation of program alternatives against their fundamental objectives may, in many instances, prove quite difficult. In some cases, lower-level, or proxy, criteria, may need to be used.”⁶⁹

The benefits of a goal-model are preferential to the system-model. “The measurement system evaluates a social unit’s success in terms of attaining its goals...the system model is concerned with the balance among the various component parts which yields higher achievements as compared to other combinations. The difference between the two approaches is that the goal-model expects organizational effectiveness to increase with the increase of more means (resources) to the organizations (or social unit). The system-model, on the other hand, perceives that there may be an in-balance in allocating a social unit resource to the goal activities and indirect non-goal activities that have to be met first in order to attain the goals set for a social unit. In other words, determining the goals a social unit should reach (goal-model) is not sufficient for a social accounting system.”⁷⁰ In this way, evaluation methods and criteria may be “interactive” rather than “sequential.”⁷¹

For the purposes of the Prevention Triangle, it is first necessary to derive a series of indicators that can actually be measured. As Hatry explains, “Multiple criteria are a complicating fact of life. Programs should be evaluated against all relevant criteria. Qualitative measurement is appropriate wherever purely quantitative measurement is insufficient.”⁷² By way of an analogy, one can apply the example of purchasing a house. While several different measures can be used in making the selection, three or four general indicators come to mind; cost, location, size, and condition. For most potential homeowners, the cost of a proposed residence is crucial, for obvious reasons. Location is another important element; one may find a property that is within one’s price range, but if the potential homeowner lives in New York State, for instance, and the property is located in Florida, then issues such as commuting time to work and school will obviously play a role in the purchase decision process. Size is another factor that needs to be addressed before a final sale can be reached. This, like the other indicators, is predicated upon the contextual aspects of the potential homeowners’ lifestyle, family size, and space requirements. If a couple without children intends to have children in the future, then a decision will need to be made if sufficient bedroom, bathroom and recreational space is available. The fourth indicator, condition, is in view of the three previous measures, an

equally important consideration. The condition of the property will determine the purchase price, as well as its ability to fulfill the expectations dictated by the previous indicators, most importantly among them, its livability.

In his 2002 Subject Matter Expert (SME) brief, Pelfrey suggests the adoption of a Tiered Prevention model based on medical prevention theory as outlined by the *National Strategy for Homeland Security*: “Medical interventions, in individuals and populations, are commonly classified into three levels of prevention.”⁷³ Pelfrey, who was drawing from the work of Froom and Benbasset, as well as upon studies by the US Preventive Services Task Force, defines the three categories of medical prevention as, “...primary prevention is to prevent the disease from occurring. Secondary prevention attempts to reduce morbidity in pre-symptomatic subjects with established disease by its early detection and treatment. Tertiary prevention is implemented on patients with a view of cure, palliation, rehabilitation, or prevention of recurrence or complications.”⁷⁴

There are two aspects to Pelfrey’s model which are of interest to our present undertaking. The first is the recognition that prevention possesses intrinsic gradations that gain relevancy through the application of situational and dispositional measures; and the second is that any prevention-based exercise program we implement must include these gradations as part of both the quantity to be measured, and the system through which such measurements will be accomplished.

Tonry and Farrington additionally define prevention according to three situational and dispositional criteria, similar to that posed by Pelfrey, but defined by their end results. “By developmental prevention, we mean interventions designed to prevent the development of criminal potential in individuals, especially those targeting risk and protective factors discovered in studies of human development. By community prevention, we mean interventions designed to change the social conditions that influence offending in residential areas. By situational prevention, we mean interventions designed to prevent the occurrence of crimes, especially by reducing opportunities and increasing risks.”⁷⁵ In his 1983 article on situational crime prevention, Clarke established base criteria that included surveillance, target hardening and environmental management.⁷⁶

Although some scholars have taken a somewhat dim view of the benefit of educating the general public on crime prevention measures, there is little doubt that a broader awareness on the part of the public concerning the dangers of terrorism is a valuable tool in the terrorism prevention arsenal. "...it is not surprising that crime-prevention publicity campaigns that simply exhort people to take preventive measures by reminding them of risks of which they may already be aware seem largely ineffective, at least when measured in terms of behavioral change."⁷⁷ Studies by Bickman and Henry (1972) illustrated that, "...a substantial increase could be obtained in appropriate responses to shoplifting if the bystanders were given cues on what to look for and what to do."⁷⁸

Applying our earlier theoretical investigations into situational, dispositional, and experiential prevention, and keeping in mind the measures analogized in our residence analogy, it is possible for us to derive four base indicators for both prevention and the measure of prevention through the conduct of preparedness exercises. These four measures are: *Timing*, *Diligence*, *Organization*, and *Diversity*. Before compiling the actual matrix, it is first necessary to define each of the four measures, and apply them to the four categories of *Deterrence*, *Interdiction*, *Response* and *Redundancy*.

Timing refers to variable elements in the measurement of time. It is exemplified by the number of exercises conducted by a jurisdiction over a period of time, as well as individual time and response components within the exercise. Timing has both situational and dispositional influences on our understanding of prevention, as indicated by Tonry and Farrington, who write: "Situational prevention, if successful, typically has immediate benefits, whereas the benefits of developmental prevention may be long delayed...The challenge to developmental researchers is to persuade policy makers to plan now to reduce crime in ten to twenty years time."⁷⁹

Diligence is defined as the observable degree or magnitude of work applied to the design and implementation of a jurisdiction's prevention-based exercise program. Diligence, which can manifest itself as vigilance when applied to community policing programs, is not without its definitional and operational challenges, but past definitional standards do provide us with direction. Clarke rightly points out the, "...difficulties in

recruiting enough people who are willing to give up time to exercise vigilance on behalf of others, and, more particularly, it is difficult to maintain enthusiasm. This is seemingly because individuals encounter so few incidents of crime that the effort required begins to seem disproportionate to results.”⁸⁰

Here we are most interested in Clarke’s use of the word, “enthusiasm,” for that is precisely the quality on which diligence is founded. Schneider posits that this enthusiasm is based upon a combination of factors, primarily confidence, knowledge, and a sense of communal interest; “Persons who have lived at their current address for a longer period of time are expected to know other persons in the neighborhood better, and, therefore, will be more likely to engage in protective neighboring.”⁸¹

Diligence is also observable when additional employees or resources are deployed to critical locations or assignments. Clarke writes that, “The importance of ‘employee’ supervision can be further illustrated by the results of a Home Office study (Mayhew, et al. 1976) of vandalism on different types of double-decker buses...,” that indicated that incidents of vandalism increased on those buses staffed by only a driver, or a single conductor.”⁸²

Organization refers to the observable level to which a jurisdiction has designed and implemented offices, chains-of-command, and other administrative functions for the purpose of conducting prevention-based exercises. Within the Interdiction, Response, and Redundancy categories, it translates into the organizational effectiveness of those groups and units tasked with various interdictional responsibilities; and to the organization, through planning and administrative oversight, of redundancy operations within a respective jurisdiction. The establishment of the United States Department of Homeland Security (USDHS) is an example of organizational prevention. “As a result, a number of Western governments, including those in France, England, Sweden, and the Netherlands, have established specialized agencies to develop, test, and evaluate crime preventative initiatives using other than law enforcement tools.”⁸³ In the early 20th Century, Shaw and McKay’s (1942) Chicago School of Criminology “focused on ecological and community explanations for crime and promoted an emphasis on community organization as a crime prevention strategy.”⁸⁴

Diversity refers to the variety of components that are included in a prevention evaluation program. Diversity can apply to the different types of weapons of mass disruption (WMD) that may be employed in a particular series of exercises, as well as to the variety of operational and organizational mechanisms deployed in response. “Most evaluations of community and situational prevention programs are quasi-experimental, with researchers measuring crime rates in areas before and after an uncontrolled or poorly controlled prevention strategy is implemented...It may be that a realistic target for a crime prevention measure is a 10 percent reduction in crime rather than a 50 percent reduction. It is important that prevention studies should be designed with sufficient statistical power to detect the likely effects.”⁸⁵

For this reason, the Prevention Triangle model eschews the traditional etiological (the fundamental social and psychological causes of crime) approaches to crime prevention by using defined proxies for criteria evaluation purposes. The interagency approach to prevention, and hence its inclusion in a prevention evaluation program, can be traced to the concept of “coproduction,” or, “...a type of citizen activity that is intended to enhance the quality or quantity of public service (Whitaker, 1980; Parks, et al. 1981; Percy 1984; Brudney and England 1983). Governments, for example, may pass laws requiring the use of seat belts in an attempt to decrease traffic deaths, but individual citizens actually determine whether seat belts are used and traffic deaths reduced.”⁸⁶

Scholars have identified two types of coproduction: joint and parallel coproduction. Joint coproduction is a “collaborative effort in which citizens act in concert with a specific, identifiable, government program to produce goods or services, whereas the latter [parallel coproduction] is an activity undertaken by citizens on a parallel track with government but without any identifiable, direct, connection.”⁸⁷ While a majority of federally sponsored prevention mandates are joint coproduction in nature, their influence on the parallel coproduction of similar objectives in the private sector, or among private organizations, can be positive for the purposes of enhancing the nation’s terrorism prevention standards.

Past efforts at measuring the efficacy of social or crime prevention programs have generally relied on the use of proxies, or quantifiable behaviors, activities, or outputs that

can be tracked or monitored for the purposes of evaluation. In a 2000 article published in *The American Economic Review*, Corman and Mocan employ a number of proxies in their efforts to provide a time-series analysis of the relationship between crime, deterrence, and drug abuse in New York City. Drawing upon earlier studies,⁸⁸ Corman and Mocan devise proxies based upon death rate (from drug use), “the drunkenness arrest rate, and the number of first admittances to mental hospitals for alcoholic psychosis as proxies for alcohol consumption...”⁸⁹ Corman and Mocan adapt earlier proxies and employ a drug-use measure as a proxy for drug consumption.⁹⁰ Doyle and Sambanis, in their article on peacebuilding, posit that, “Human costs also proxy the level of war-generated hostility,”⁹¹ meaning that the number of personnel killed or wounded can be used as a measure for hostilities, or destructive intent. Heidinsfield’s studies employed the “number of persons charged by the police” as a proxy in his evaluation of public morals and disturbances of the peace crimes,⁹² while Jobson and Schneck mirrored the Parratt model when they selected the proxies of *hierarchical evaluation, crime rate, solve rate, perceived effectiveness, seriousness of crime, safety in environment, process behavior, task performance, importance of organization, and participation in community*,⁹³ for their crime program evaluation matrices.

While Hatry warns against the excessive use of “...proxy or ‘lower-level’ criteria without at least briefly examining the relation of the proxies to the basic objectives...,”⁹⁴ the selection and use of proxies for evaluative purposes is critical to the success of the prevention mandate. Initially, it permits for the collection of data; over time, this data can then be arranged into a baseline configuration, perhaps identifying in the process a new set of proxies that can be used to make even more finite observations of programmatic operations. What is important in the measurement of terrorism prevention is that a start be made. And proxies allow for that basis in the data collection process.

We have already selected several proxies in the course of this study. The four pillars of prevention – Deterrence, Interdiction, Response, and Redundancy – are proxies for the behaviors and activities that should occur as part of a prevention program. The four evaluative criteria, as well, are represented by proxies, although these are of a more specific nature, and hence, application. Hatry, who used proxies for the purposes of

evaluating nondefense public programs, indicates the need for such proxies: “Evaluation of program alternatives against their fundamental objectives may, in many instances, prove quite difficult. In some cases, lower-level, or proxy, criteria, may need to be used.”⁹⁵

Although we have employed “lower-level” or specific proxies for our four pillar measures – Timing, Diligence, Organization, and Diversity – we still need to follow Hatry’s example: “Where proxy criteria have been used, their deficiencies should be explicitly identified and care taken that the proxy criteria at least tend to be compatible with the more fundamental criteria.”⁹⁶

This exercise in compatibility, as it were, occurs within the final step of this process, the Prevention Triangle.

IX. THE PREVENTION TRIANGLE

The Prevention Triangle employs proxies that reflect situational, dispositional, and experiential prevention theories, as well as evaluative criteria, to provide a model for the evaluation of terrorism prevention programs. Drawn from the equidistant “Fire Triangle” model, where three components – fuel, heat and oxygen – are necessary to sustain fire (and if one of the elements are removed, fire will not occur, as indicated in our Third Principle), the Prevention Triangle contends that three principal components define the prevention mandate, and that the absence or underperformance of one or more of the three will ultimately affect the relative success of the overall prevention mandate. Although two of the Prevention Triangle’s three sides are graphically shorter than the third, they are metaphorically and operationally no less important to the success of the entire model. Each component plays an equally important role in terms of its relation to the remaining two, and is known by the identifiers, “Objectives,” “Capabilities,” and “Hostilities.”

As evidenced by the “Fire Triangle” example, triangles are popular models for graphically illustrating the various relationships between complex societal, economic, political, and military organizations. In her analysis of the effectiveness of consumer product regulations, Oster attempts to, “...transform the deterrent effects estimated...into an estimate of the value of regulation...The analysis is an application of the Harberger ‘triangle loss’ work familiar in estimating the costs of monopoly.”⁹⁷ Doyle and Sambanis adopt the triangle model as part of their analysis of the effectiveness of international peacebuilding initiatives, with results derived from, “...the three dimensions of a triangle whose area is the ‘political space,’ or effective capacity, for building peace.”⁹⁸ Our decision to select the triangle model was in large part dictated by the necessity of applying proxies to the identification of large societal factors, then configuring them in such a fashion as to yield a numerical relationship between them. Because we determined that only three overarching proxies were required to effectively evaluate the prevention of terrorist activity, the triangle proved a readily adaptable graphical model.

These findings, therefore, lead us to the development of the Prevention Triangle, where (OB) Objectives are those (DI) Dispositional prevention objectives, be they administrative, political, economic, or social in design and implementation; (CP) Capabilities are those (SI) Situational prevention methods and resources that can be applied to the prevention of terrorist activities; and (HO) Hostilities, as a measure of (EI) or the Experiential prevention components within our prevention matrix.

Like the Situational-Dispositional-Experiential model earlier illustrated, the Prevention Triangle contains a divisor, in this case (HO), which serves as an evaluative constant that is relevant or dynamically related to the (OB) and (CP) functions.

A. OBJECTIVES, CAPABILITIES, AND HOSTILITIES

In the Prevention Triangle, *Objectives* refers to those governmental, jurisdictional, or organizational goals that define the administrative components of the *National Strategy for Homeland Security*, as well as select individual strategies and tactics unique to asymmetric warfare, such as the disruption of terrorism financing networks and the need for a liberal democracy like the United States to account for the potentially deleterious impact of special legislation on its Constitutional traditions. For the purposes of this study, we have chosen not to categorize Prevention itself as one of the Objectives; it is the primary output of the Prevention Triangle, and its use in the OB column would dilute the clarity of the proxies selected as evaluative criteria.

Objectives have long been recognized as a viable component in the evaluation of social improvement and crime prevention programs. In his 1970 article, “Measuring the Effectiveness of Nondefense Public Programs,” Hatry suggests that without a correlation between “basic governmental objectives,” and outputs, no accurate assessment or evaluation of the effectiveness of a public program can occur.⁹⁹ In a nod to Machiavelli’s concept of the *effectuale verité*,¹⁰⁰ Hatry contends that the “underlying objectives of the government” are measured by their “effects on people.”¹⁰¹ In an example to support his hypothesis, Hatry presents the case of a local economic development jurisdiction that eschews traditional evaluative measures such as the “numbers of businesses contacted” in favor of “the number of new industries established in the area.”¹⁰² Parratt’s “Scale to Measure Effectiveness of Police Functioning,” unveiled in 1938, relies on a tally of

“public approvals and disapprovals,”¹⁰³ indicating an emphasis on evaluative criteria drawn from the quantifiable actuality of a program’s or organization’s operation. And in their 2000 study Doyle and Sambanis posit that the Thucydidean and Hobbesian “trinity of motives (fear, honor, interest) are present in modern variations – security dilemmas, ethnic identity and/or ideological fervor, and loot seeking...,”¹⁰⁴ each of which by extension represent proxies for the evaluation of Objectives and Hostilities.

In terms of our study, government or jurisdictional objectives are fairly broad, and in keeping with our earlier contention, should be determined by the respective policymakers. In his assessment of nondefense public programs, Hatry outlines several government objectives, among them, Personal Safety, Health, Intellectual Development, Community Environment, Economic Status, Leisure-Time opportunities, and Infrastructure arrangement.¹⁰⁵ Hatry impresses upon his readership the importance of looking for, “...possible consequences, negative as well as beneficial, that government programs may have on objectives other than those at which the programs are explicitly aimed...”¹⁰⁶

For the purposes of preventing terrorist attacks against the United States, Objectives (OB) within the Prevention Triangle model principally refer to those “Critical Mission Areas” stipulated by the *National Strategy for Homeland Security*.¹⁰⁷ Reaching across a broad spectrum of American society, these objectives range from “Intelligence and Warning,” to the protection of “Critical Infrastructure and Key Assets,” to “Emergency Preparedness and Response.” Within each of these segments are further objective delineations, smaller, more specific goals or “initiatives”¹⁰⁸ that serve as proxies for the larger strategic objectives. Almost every one of these initiatives is, in terms of their influence or impact on organizational viability or individual behavior, measurable for the purposes of evaluating prevention.

Additionally, the National Strategy for Homeland Security identifies three primary “Strategic Objectives”: the prevention of terrorist attacks in the United States; the reduction of the nation’s vulnerability; and the minimization and rapid recovery from those attacks that do occur.¹⁰⁹ Although we support Hatry’s assessment that government policy and decision-makers should be responsible for identifying Objectives, the three

Strategic Objectives outlined above are simply too broad, too undefined in their actuality, to serve as effective measures of the prevention mandate. The more specific objectives contained within the Critical Mission Areas are more easily applied to the Prevention Triangle model, and through the use of proxies, will be identified for the interests of this study.

Capabilities (CP) refers to those physical or financial resources and assets that can be deployed or used within the operational components of a jurisdiction's terrorism prevention mandate. It may seem a simpler approach to categorize Capabilities as *Tools*, but as we shall see, Capabilities may serve as tools, but are in and of themselves much too expansive in actuality to be wielded as such. As is the case with the Objectives component, Capabilities are partially defined by the *National Strategy for Homeland Security*, within the "Foundations" section. Serving as proxies for our evaluative purposes, these Capabilities extend from "Law" and "Science and Technology," to "Information Sharing and Systems" and "International Cooperation."¹¹⁰ The use of laws and their attendant judicial apparatuses, for instance, are an important Capability in our ability to successfully realize each of the counterterrorism Objectives outlined in the *National Strategy*. In addition to its prosecutorial and deterrence value, the use of the Law and its evaluation as part of the prevention mandate permit the greater legitimization and acceptance of the nation's global alliance against terrorism. While it may be suggested that improvements to the Law for the purposes of combating terrorism rightly belong in the Objectives category (similar in example to the National Strategy's recommendation that the Federal Bureau of Investigation's (FBI) "analytic capabilities" be enhanced),¹¹¹ the true effectiveness of the Law, and hence our ability to evaluate it, can only be found in the efficacy of its application. And it is for these and other reasons that we place Law within the Capabilities component.

Personnel and material assets are also included within the Capabilities section. As indicated in Chapter One of our study, it has long been recognized by crime prevention theory and practice that the deployment of personnel and equipment – or the increase of personnel and equipment – is critical to the measurable success of crime prevention or deterrence programs. "The results," write Corman and Mocan of their

study into the relationship between crime, deterrence, and drug abuse in 1990's New York City, "provide strong support for the deterrence hypothesis. Murders, robberies, burglaries, and motor-vehicle thefts decline in response to increases in arrests; an increase in the size of the police force generates a decrease in robberies and burglaries."¹¹² While many definitional and operational differences exist between criminal and terrorist activity, sufficient evidence exists, as indicated in Chapter One, that the offensive and/or defensive deployment of additional personnel and equipment does yield convincing results, particularly when viewed in terms of situational prevention theory.

The last of the Prevention Triangle's three components, *Hostilities* is probably the most difficult to define and observe, and yet is equally likely to be the single most important factor in the terrorism prevention formula. The use of Hostilities (HO) as an evaluative proxy during times of military or political crisis is not new, and has been employed by military officials and political theorists for centuries. In many respects, the principal purpose of military intelligence is to determine hostile intent, and the consequences of not accurately assessing troop strength and/or the willingness and ability of an opponent to use military resources, can be catastrophic.¹¹³ In 2000, Doyle and Sambanis included a numerical assessment of Hostilities in their international peacebuilding model, one in which, "...pre- and postwar levels of local capacities interact with present international capacities to deliver specific postconflict outcomes."¹¹⁴ For Doyle and Sambanis' purposes, these outcomes were grouped under the rubric of "peacebuilding," and were applied to the understanding that, "...peacebuilding is the front line of preventive action."¹¹⁵

As adapted from previous examples, the inclusion of the Hostilities component in the Prevention Triangle model allows us to more effectively observe the functionality of terrorism prevention Objectives. Without Hostilities, or without an assessment of Hostilities, it is nearly impossible to have an understanding or quantification of prevention. At first glance this may seem paradoxical; on the one hand, without

Hostilities there is nothing to prevent against; and on the other, if the attacks are being successfully prevented through the implementation of Objectives and the application of Capabilities, does this mean that Hostilities do not exist?

As Hatry indicates in his example of how to best measure the effectiveness of child health programs, "...if...no defects could be corrected or alleviated, all the examination in the world would be useless and would be a waste of resources."¹¹⁶ While Hatry's argument revolves around whether or not a particular objective can be achieved (in his example, curing or alleviating child illness, for our purposes, the prevention of terrorist activity), it has further application to the understanding that without an assessment of Hostilities by both state and non-state participants, there cannot be an accurate evaluation of those measures taken to prevent terrorism. For this reason, risk is defined as, "...the perceived probability of victimization whereas vulnerability refers to perceptions of the ability of the individual to ward off a would-be criminal if a crime were attempted."¹¹⁷

Even if prevention is successfully practiced, Hostilities or risk will remain a viable component of the Prevention Triangle because the categorization not only extends to actual combat or the deployment of terrorist operatives, but also to intent. Since threat is often defined as the sum of ability and intent, it is relatively easy to recognize its application to our present task. Moreover, as evidenced by the nation's experience in fighting the Second Gulf War, acts of terrorism or asymmetric warfare can be waged against military targets with considerable destructive effectiveness. By strict definitional standards, these attacks are not precisely of a terrorist nature, except that their relentless occurrence and potentially steep death tolls can serve as a catalyst for public opposition, as well as a manifestation of tactical disruption, thereby decreasing the operational efficiency of the respective campaign.

It is for these reasons that, conceptually and mathematically, we have chosen to place Hostilities within the Prevention Triangle's hypotenuse, or its longest side.

Hostilities therefore become the divisor – both metaphorically and in actuality - by which the remaining sides, *Objectives* and *Capabilities*, are evaluated. The resulting formula reads:

$$PV = OB + CP \div HO$$

where PV represents Prevention, OB represents the Objectives coefficient, CP represents the Capabilities coefficient, and HO represents Hostilities.

Each of the three categories, OB, CP, and HO, are given coefficients based upon the measures taken from the application of the evaluative criteria – Timing (TM), Diligence (DG), Organization (OR), and Diversity (DV) – to their respective prevention programs. For instance, Objectives (OB):

Timing. How timely has a jurisdiction been in identifying its terrorism prevention Objectives?

A complete and detailed analysis of jurisdictional Objectives was completed in: (specify days, months, or years)

Diligence. How diligent or determined has a jurisdiction been in identifying its terrorism prevention objectives?

During the time period specified in the Timing category, how many people were hired, or assigned, to prepare terrorism prevention Objectives?

Organization. What organizational changes or enhancements have been undertaken, including financial administration, to prepare terrorism prevention Objectives?

During the time period specified in the Timing category, has a jurisdiction instituted a terrorism prevention program, or instituted policies designed to facilitate the identification of terrorism prevention Objectives?

Diversity. What different strategies or tactics has a jurisdiction employed in identifying its terrorism prevention Objectives?

During the time period specified in the Timing category, how many different strategies or tactics has a jurisdiction instituted?

In the example of Capabilities (CP), the evaluators are similar in presentation, but are designed to provide an assessment of a jurisdiction's respective Capabilities as they pertain to the prevention of terrorism. These include the number of public safety personnel (police, fire, emergency medical services, emergency management) either hired or deployed in the implementation of terrorism prevention Objectives; the time in which it took to acquire and deploy equipment designed to augment terrorism prevention efforts; the type and variety of personnel and equipment that was deployed and acquired as part of a terrorism prevention Objective; and other measures associated with Deterrence, Interdiction, Response, and Redundancy planning and operations.

For each category, a numerical coefficient, obtained from a predetermined chart, is entered. These are then tallied to provide the individual OB and CP coefficients. For the purposes of this study, we have assumed that the coefficient zero (0) is entirely possible, but not probable. We have therefore accounted for zero (0) in the chart by setting the comparative ranges at 0 to 9, 10-19, 20-29, etc, depending upon the evaluative criteria. The coefficient ranges for Timing, for example, start at 0, but range to 30 days, 31-60 days, etc, in keeping with the accepted unit of measurement for the individual criteria.

Once the individual OB and CP coefficients have been determined, these are added, and then divided by the coefficient assigned to the HO evaluation. Like the OB and CP factors, HO is determined by an assessment of available intelligence concerning Hostilities, as well as an assessment based upon the four evaluative criteria, Timing, Diligence, Organization, and Diversity. The theoretical basis for the assessment of hostilities as part of a crime prevention program more or less informs most of the theoretical literature on the subject, as evidenced by Tonry and Farrington who urge studying "local patterns of crime" before "devising prevention strategies appropriate to local problems in the light of these analyses...."¹¹⁸ If one recalls our earlier discussion of anti-piracy precautions taken aboard those merchant vessels operating in pirate-infested waters, and their applicability to a limited or, as Pelfry would suggest, a tiered approach to terrorism prevention, then the efficacy of this approach can be readily understood. When applied to maritime piracy, the "patterns of local crime" indicate that the pirates

are primarily interested in money, and that armed attempts to resist piratical activities often result in the deaths of crew members, and/or the vessel's loss. The owners of these vessels have decided, therefore, to specify objectives that are achievable, and are informed by the previous observable behavior of the Hostilities (in this case, marine pirates) in order to achieve their respective level of prevention.

Owing to the difficulties inherent in obtaining an accurate assessment of an opponent's Objectives and Capabilities, these are not directly tallied as part of the Prevention Triangle process. If it were possible to ascertain coefficients for Objectives and Capabilities, then we might possess the ability to derive PV from a comparison of the PV product for the United States or other jurisdictions, and what the PV product would be for our opponents. One must make the assumption that just as the United States seeks to prevent acts of terrorism, terrorist organizations may likewise desire to prevent the United States from engaging in proactive prevention programs – which would be, for the purposes of this study, considered a form of terrorist prevention.

As designed, the Prevention Triangle's HO coefficient is derived from an assessment based upon our four evaluative criteria:

Timing. How timely has an opponent been in launching terrorist attacks?

X [numerical value] of terrorist attacks were launched within a specified time period (specify days, months, or years).

Diligence. How diligent or determined has a terrorist organization been in planning and implementing its terrorist attacks?

During the time period specified in the Timing category, how many people (non-terrorist) were killed or injured in the identified terrorist operations?

Organization. What organizational changes or enhancements have been undertaken, including financial administration, within terrorist organizations?

During the time period specified in the Timing category, has a terrorist organization developed internal organizational capabilities, or established overseas cells? If yes, how many of these organizations or cells have been established? This value represents the Organizational coefficient.

Diversity. What different strategies or tactics has a terrorist organization employed in achieving its objectives?

During the time period specified in the Timing category, how many different strategies or tactics has a terrorist organization instituted? This figure can be derived from an assessment of the different types of weapons used (i.e., car bombs, sniper attacks, explosive devices, assassinations, etc.)

The values for each are tallied, then added together under the evaluative formula $[HO = TI + DG + OR + DV]$ to derive the HO coefficient. Under the Prevention Triangle model, the HO value is then inserted into the equation $[PV = OB + CP \div HO]$, thereby yielding the PV product. This coefficient can, in turn, be used to measure prevention according to whatever time span is supported by data collection and analysis efforts, and the decision made by respective policy makers as to the Objectives subset.

X. CONCLUSIONS

The Prevention Triangle draws upon three primary outputs of prevention theory, namely, *Interdiction*, *Response*, and *Redundancy*, but following the addition of evaluation theories, eschews these in favor of three measures, *Objectives*, *Capabilities*, and *Hostilities*. The three traditional pillars of terrorism prevention have, through practice and theory, been adapted from crime prevention outputs involving, "...deterrence, rehabilitation, primary prevention, or incapacitation..."¹¹⁹ Professor William V. Pelfrey, in a draft brief prepared for Subject Matter Experts (SME) dealing with prevention, outlines three categories, "...used in framing a Prevention Typology...Deterrence, Preemption, and Protection."¹²⁰

As evidenced in the preceding sections, the most effective evaluation systems have been those that observe a broad scale of indicators, including those culled from across the social and governmental spectrum. "Historical analysis tells us, however, that policing has always consisted of a complex division of labour; a varying balance between public elements, private elements, and those 'hybrid' elements whose status is neither unambiguously private nor unambiguously public."¹²¹

For our purposes, this assessment prompts a reconsideration of the limited application of limited indicators in favor of an expanded definitional understanding and an increased number of specific indicators. If, for instance, we hold to Tonry and Farrington's assertion that, "Collaboration with public health practitioners may be useful in expanding the range of measures of crime,"¹²² then the evaluation approach to prevention must be enhanced to both include and observe an example of the interagency approach to prevention, and to the specific indicators unique to the health and medical function. Tonry and Farrington conclude that, "More complex prevention programs involving several different elements...are more difficult to evaluate but perhaps have a greater chance of being effective in reducing offending than programs based on only one type of prevention technique."¹²³

Although no study into any subject is ever as comprehensive as we might prefer, we have in the course of this study determined several important aspects of prevention theory and evaluation that we believe may be applicable to the present alliance against terrorism. During the course of this essay, we have determined that based upon previous crime prevention examples, it is possible to prevent or mitigate select acts of terrorism. We have come to an understanding that prevention must be defined in terms of situational, dispositional, and experiential factors, and its components allied along both axes in order to be effectively measured. We have established proxies that allow us to define objectives and capabilities-based factors within the concept of prevention - Interdiction, Response, and Redundancy. And we have illustrated how each of these four intermediate outcomes fulfills some aspect of the *National Strategy for Homeland Security*, and is measurable through observable operational behavior and decision-making.

We have also illustrated how prevention is of a situational, dispositional, and experiential nature, and therefore can be defined by the three rubrics inspired by crime prevention theory. We have reviewed different schools of evaluation and coproduction theory and from this process developed a set of evaluative criteria – *Timing*, *Diligence*, *Organization*, and *Diversity* – that are based upon the effect these prevention measures would have on the nation and its participating jurisdictions. We have also surveyed various concepts regarding the use of proxies, and the numerous values and difficulties inherent in their application to the evaluation of prevention programs. This is one of those areas where additional research is required, and a full list of all possible criteria developed. Finally, we joined the theoretical aspects of crime and terrorism prevention with the practical evaluative application of the Prevention Triangle. By using the formula derived from the Prevention Triangle's components, we believe an accurate measure of our national prevention index can be produced.

During the course of our own hero's journey, we also discovered a few other insights, each of which has a bearing on the success of the national prevention mandate. Because documents such as the *National Strategy for Homeland Security* are instrumental factors in determining the nation's terrorism prevention objectives, it is similarly

necessary that the specific mission areas within the *National Strategy* be updated on an annual basis. In addition to being an example of joint coproduction, this practice would permit a more structured approach to the setting of Objectives, in that the Objectives could be worded and organized in order to better facilitate quantification and evaluation.

We also came to an understanding that, as evidenced in previous studies of crime prevention programs, terrorism prevention requires baseline data, accumulated over many years, in order to be accurately evaluated. The most important decisions to be made at present concerning prevention is the selection of a uniform, applicable method for evaluating prevention mandates, and the collection of baseline data that can be used for the refinement of evaluative criteria, and perhaps, even the determination of future objectives.

We should not fear this approach, or be deterred from pursuing it because it appears incomplete, or relies on too much material that is as yet undefined. The most important strategy as applied to prevention is the one that allows us to start the process. In part, through the promulgation of the *National Strategy for Homeland Security*, and the identification of prevention objectives, the United States and its constituent jurisdictions have taken that important first step. The challenge now remaining is to move beyond this start, to enter the process itself, and actively seek improvements to our prevention objectives and capabilities through an evaluation of their ongoing existence.

The addition of experiential prevention into the Prevention Triangle model is a sound development in the formulation of a prevention evaluation system. It allows us to establish a progression, both theoretical and in the actuality of the equations that result, that leads to a common transitory benefit. Essentially, we have seen how Situational Prevention is equivalent to “How,” and that this, in turn, leads to an assessment of Capabilities. Dispositional is equivalent to “When,” and is commensurate with the Objectives leg in the Prevention Triangle. And Experiential Prevention is equivalent to “Why,” and is parallel to the role of Hostilities in the Prevention Triangle concept.

If we accept this logical model, then there is a paradoxical aspect to this undertaking that yields a startling and perhaps ominous insight. If we hold with the

existence of experiential prevention and its influence on the effectiveness of dispositional and situational prevention, then without any terrorist activity or attacks, we would not be able to support the dispositional will or the situational implementation that is necessary for the Prevention Triangle to work. As seen in our Third Principle, the removal or negation of any one leg in the Theoretical Prevention Triangle seriously impacts the operation of the other two; this is logically possible since the three are, by virtue of their respective dynamics, responsible for fulfilling different objectives within the Prevention Triangle concept. The degree to which each leg fails is, of course, contingent upon its relative position before failure, and the circumstances under which it did not achieve its objectives. Should situational failure occur, prevention is not successful. And should experiential prevention, as the longest leg of the triangle, not succeed, then both dispositional and situational prevention measures have a much greater probability of failure because they are, by virtue of their positions within the Prevention Triangle model, dependent upon the experiential or awareness function.

Although our logical proofs indicate that without experiential prevention, or without Hostilities, we cannot have evolving levels of prevention, it does appear that in order to effectively prevent 90% of terrorist attacks, we must endure the other 10%. And since we know through the collective experience of modern life that nothing is 100%, or ever entirely preventable, we should consider this precept as an explanation for why terrorist attacks will continue to occur, and of how our prevention mandates can ultimately be strengthened because of them.

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